

# RESPIRATORY SYSTEM AND BREATHING Indian Ked Cross Society

# SECTIONS

**B.3** 

**B.2** 

No Breathing or Difficult Breathing Drowning

**B.4** Strangulation and Hanging

**B.6** 

Swelling within the Throat

**B.7** 

Suffocation by smoke or gases





### Choking





## NO BREATHING OR DIFFICULT BREATHING





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WHAT DO I DO WHEN THE CASUALTY **IS NOT BREATHING OR NOT BREATHING NORMALLY?** 

### **CAUSES OF NO BREATHING:**

Conditions Affecting the Air Passage:

- Foreign body inhalation (coins, artificial teeth)
- Food inhalation
- Drowning-related obstruction (seaweeds, mud, water)
- Bronchial asthma
- Tongue falling back in an unconscious person
- Tissue swelling due to scalding or allergic reactions
- Inhalation of irritant gases



Compression of the Air Passage (Usually Deliberate, Sometimes Accidental):

- Smothering (covering the face of an infant or unconscious) person)
- Strangulation with ropes or scarves
- Hanging or throttling (applying pressure on the windpipe)

## **CONDITIONS AFFECTING THE RESPIRATORY MECHANISM:**

- Epilepsy, tetanus, rabies, etc.
- Nerve diseases causing paralysis of the chest wall or diaphragm
- Poisonous bites (e.g., snake bites)

## **CONDITIONS AFFECTING RESPIRATORY CENTRE:**

- Overdose of morphia or similar products
- Electric shock
- Stroke

## **COMPRESSION OF THE CHEST:**

- Caving in of earth or sand
- Compression by grain in a silo
- Crushing against a wall or barrier
- Pressure in a crowd (stampede)

# LACK OF OXYGEN AT HIGH ALTITUDES:

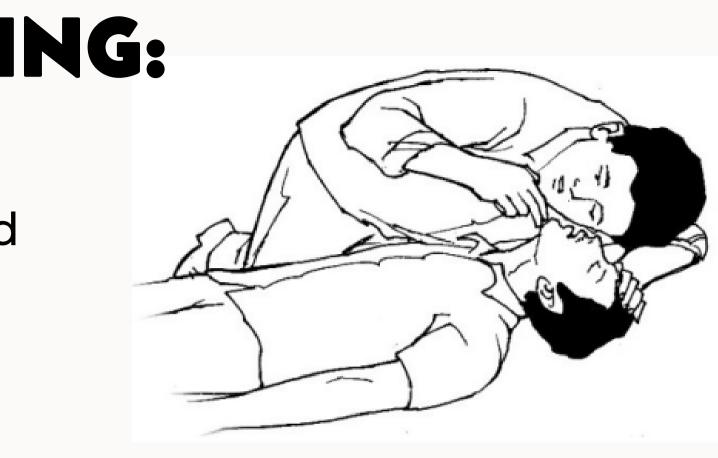
- Low atmospheric pressure with low oxygen levels
- Lack of acclimatization

## **SIGNS OF NO BREATHING:**

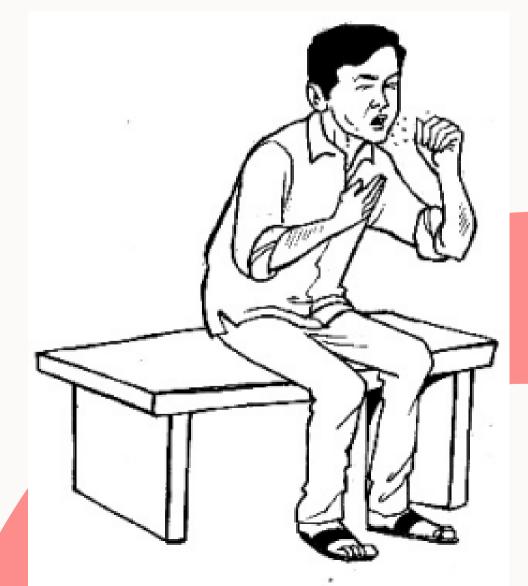
- No flow of air out of the nose or mouth
- Chest of the victim does not move up and down

## **SIGNS OF ASPHYXIA:**

- Difficulty in breathing and restlessness
- Increased breathing rate with shorter breaths
- Swollen veins in the neck
- Bluish coloration of the face, lips, nails, fingers, and toes
- Faster and feebler pulse







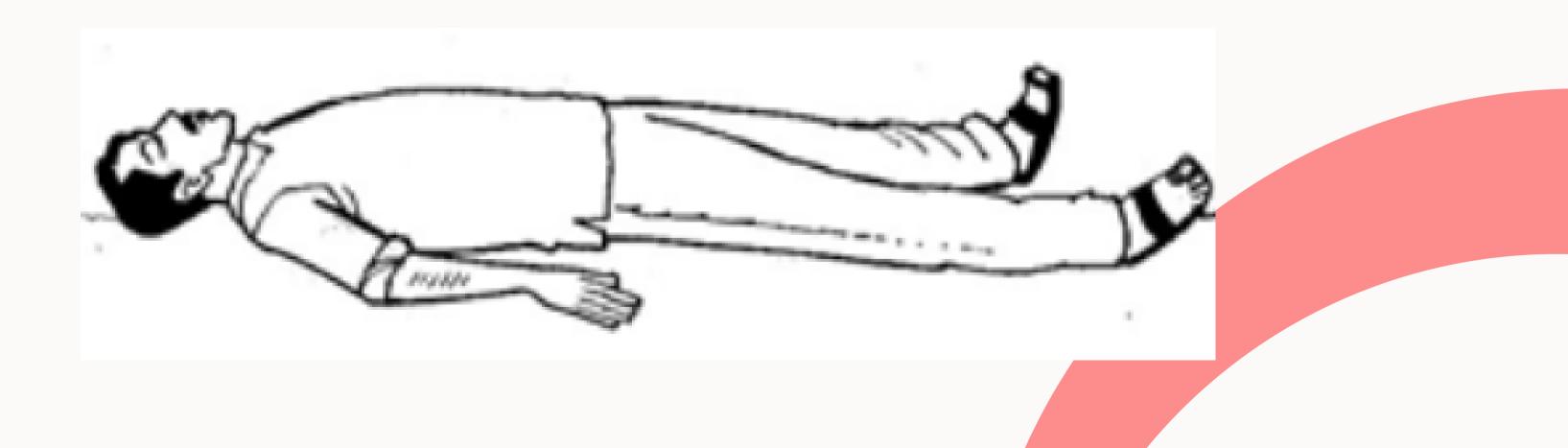
# STEPS TO TAKE WHEN THE CASUALTY **IS NOT BREATHING OR BREATHING ABNORMALLY:**

### **1. Safety First and Call for Help:**

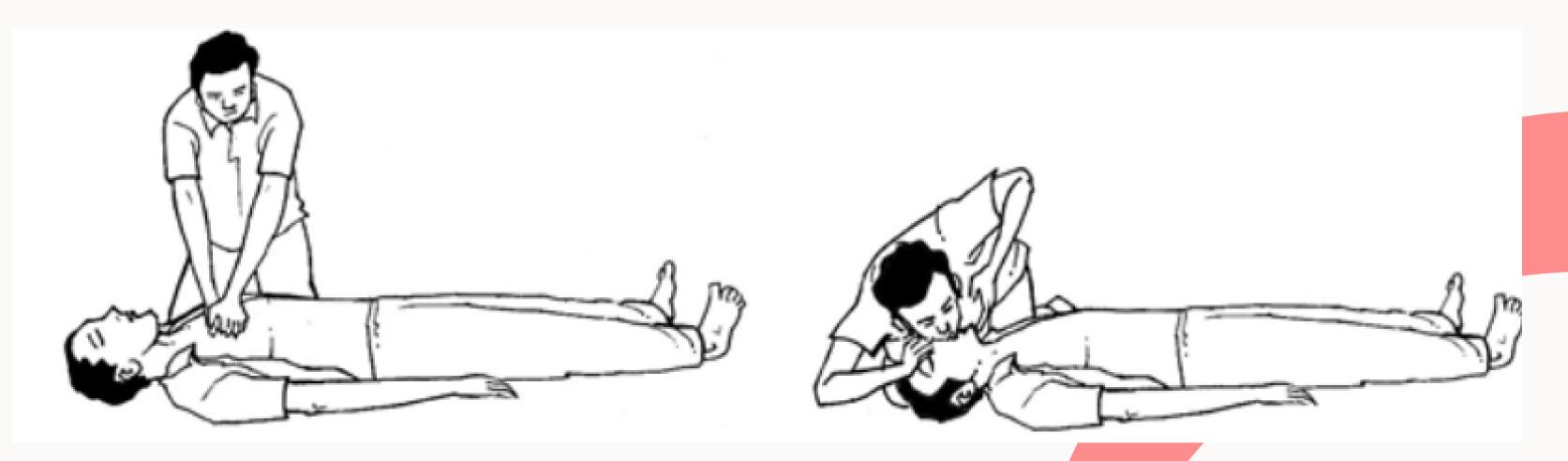
- Ensure personal safety and call for assistance
- Remove any suffocation causes

### 2. Securing an Open Airway and Starting CPR

- Remove any cause of suffocation, prioritizing personal safety.
- Turn the person onto their back if they are not already in that position.
- Kneel down beside the person.



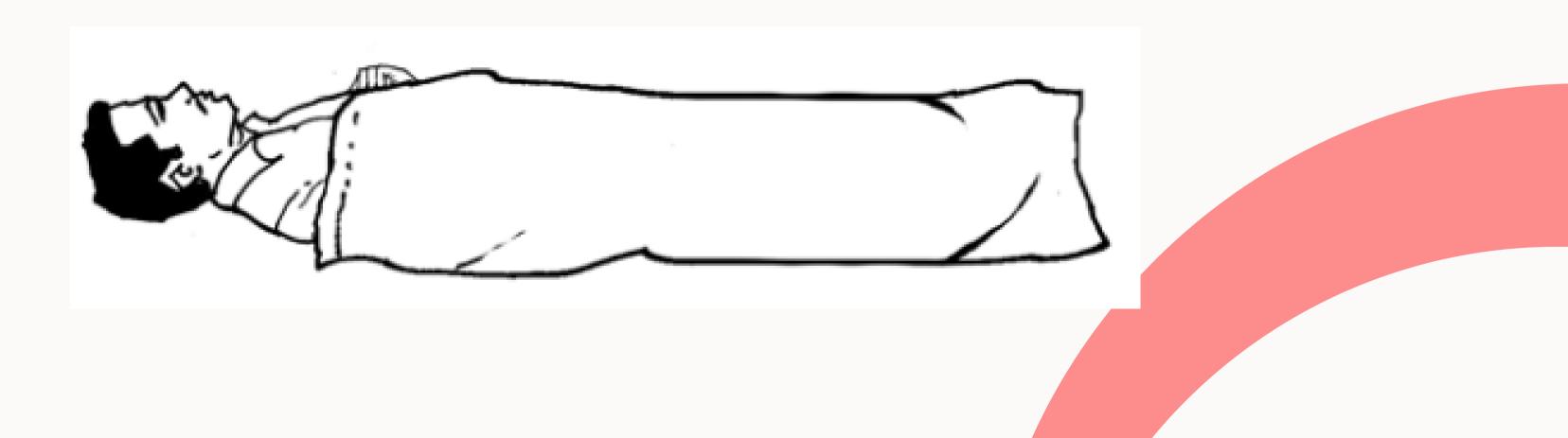
- Begin CPR and do not interrupt resuscitation until:
- 1. The victim wakes up, moves, opens eyes, and breathes normally.
- 2. Trained help in CPR arrives and takes over.
- 3. Exhaustion prevents continuing CPR.
- 4. The scene becomes unsafe to continue.
- 5. Cover the casualty after resuscitation.





• If Breathing Restarts:

1. Keep the victim covered to maintain warmth. 2. Arrange urgent transport to a hospital. 3. Do not leave the victim alone and continue to observe. 4. If breathing stops again, restart CPR.



### 3. Hygiene

Always wash your hands after taking care of a person. Use soap and water to wash your hands. Alcohol-based sanitizers can also be used, if available.



# **UNCONSCIOUS**

### BREATHING

### **RECOVERY POSITION**

### UNCONSCIOUS

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### NOT BREATHING OR NOT BREATHING NORMALLY

CPR





### WHAT DO I SEE AND ENQUIRE?



WHAT DO I DO?



### **REMOVE THE VICTIM OUT OF THE** WATER





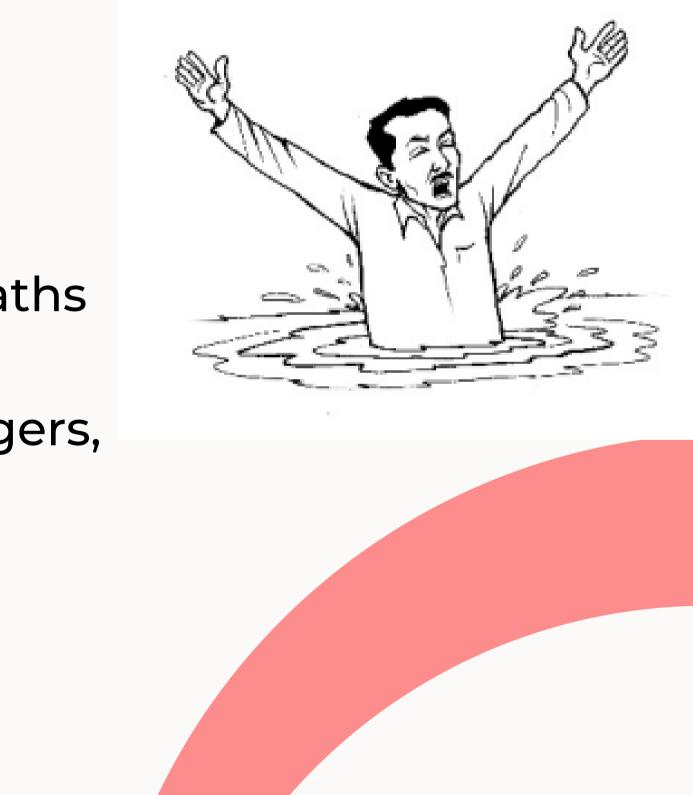
## **CAUSES OF DROWNING:**

- Asphyxia by water, weeds, and mud entering the lungs
- Dry drowning: Vocal cord spasm due to breathing in water, leading to airway obstruction
- Secondary drowning: Water left in the lungs causing swelling (edema) over time
- Cold water immersion can lead to hypothermia
- Possible trauma to the head, neck, or spine in diving incidents

## **SIGNS OF DROWNING:**

- Victim in distress in the water
- Signs of drowning may include:
- No breathing
- Difficulty breathing and restlessness
- Increased breathing rate with shorter breaths
- Swollen veins in the neck
- Bluish coloration of the face, lips, nails, fingers, and toes
- Faster and feebler pulse
- Water gushing from the mouth (stomach contents)





## **ACTIONS TO TAKE:**

### **1. Safety First and Call for help:**

- Ensure personal safety and call for assistance
- Seek help or arrange urgent transport to the nearest healthcare facility

### 2. Remove the Victim Out of the Water:

- Remove the person from the water rapidly and safely
- Use a rope or object for the person to hold onto if conscious and able





- If the Victim is Breathing:
- 1. Place the person in the recovery position and cover them to keep warm
- 2. Do not leave the victim alone and continue to observe
- If the Victim is Not Breathing or Not Breathing Normally:
- 1. Remove any cause of suffocation
- 2. Turn the person on their back if not already
- 3. Kneel down beside the person
- 4. Start CPR and continue until help arrives or conditions change

### 3. Hygiene

Always wash your hands after taking care of a person. Use soap and water to wash your hands. Alcohol-based sanitizers can also be used, if available.



# STRANGULATION AND HANGING



# Understanding Strangulation and Hanging

- Strangulation involves constriction or squeezing around the neck or throat, cutting off the airway.
- Hanging refers to the suspension of the body by a noose around the neck.
- Accidental strangulation or hanging can occur due to clothing or ties getting caught in machinery.
- Hanging may result in a broken neck, requiring careful handling of the casualty.



# Safety First and Call for Help

- Ensure personal safety before assisting.
- Call for help if alone and ask a bystander to seek immediate assistance or arrange transportation to the nearest healthcare facility.
- Cut or remove any constricting bands around the throat.
- If the victim is suspended, raise the body and loosen or cut the rope.
- Lay the person on the ground, taking care to avoid causing further neck injuries.

# If the Victim is Breathing

- If the person is breathing, place them in the recovery position and cover with a blanket or coat to maintain warmth.
- Do not leave the victim unattended and continue monitoring.

# If the Victim is Not Breathing or **Breathing Abnormally**

- Remove any causes of suffocation, ensuring your own safety.
- If the person is not lying on their back, carefully turn them onto their back.
- Kneel down beside the person to initiate CPR.

# If breathing resumes

- Cover the victim to maintain warmth.
- Arrange urgent transport to a hospital.
- Do not leave the victim unattended and continue monitoring.
- If breathing stops again, restart CPR.



# HYGIENE



 Wash your hands before and after taking care of patient

 Maintain hygiene by washing hands with soap and water or an alcohol based sanitizer

# **CHOKING**



# Understanding Choking

- Choking occurs when a person has severe difficulty breathing due to an obstructed airway or lack of air.
- Coughing is the natural response to mild choking, indicating that there is still airflow through the windpipe.
- Severe choking occurs when the airway is blocked by a foreign object or local swelling, posing a lifethreatening emergency.
- Infants and children often choke on non-edible objects, while most adult choking incidents happen while eating.

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# SIGNS AND SYMPTOMS



### When a person is choking, observe the following signs:

- Difficulty in breathing
- Ineffective coughing
- Inability to speak or make sounds
- Hands grasping the throat
- Blue lips and tongue
- Prominent veins in the face and neck
- Dizziness or potential loss of consciousness



# Actions for Choking

 Approach and Help the Choking Person

 Ask the person, "Are you choking?" (If the person can understand and respond)

### If the Person Can Cough or Breathe

- Instruct the person to continue coughing.
- Stay with the person until they can breathe normally again.

### If the Person Cannot Speak, Cough, or Breathe

- Stand to the side and slightly behind the choking person (older than one year).
- Support the person's chest with one hand and bend them forward.
  Deliver five firm blows between the shoulder blades using the heel
- Deliver five firm blows between the shou of your hand.
- Verify if the object has been dislodged and the person can breathe again

ng. Athe normally again.

### If the Object Did Not Dislodge and Choking Continues

- Stand behind the choking person, placing both hands around their abdomen.
- Form a fist and position it between the navel and lower tip of the breastbone.
- Hold your fist with your other hand and bend the person forward.
- Pull your fist firmly toward you and upwards, delivering five abdominal thrusts.

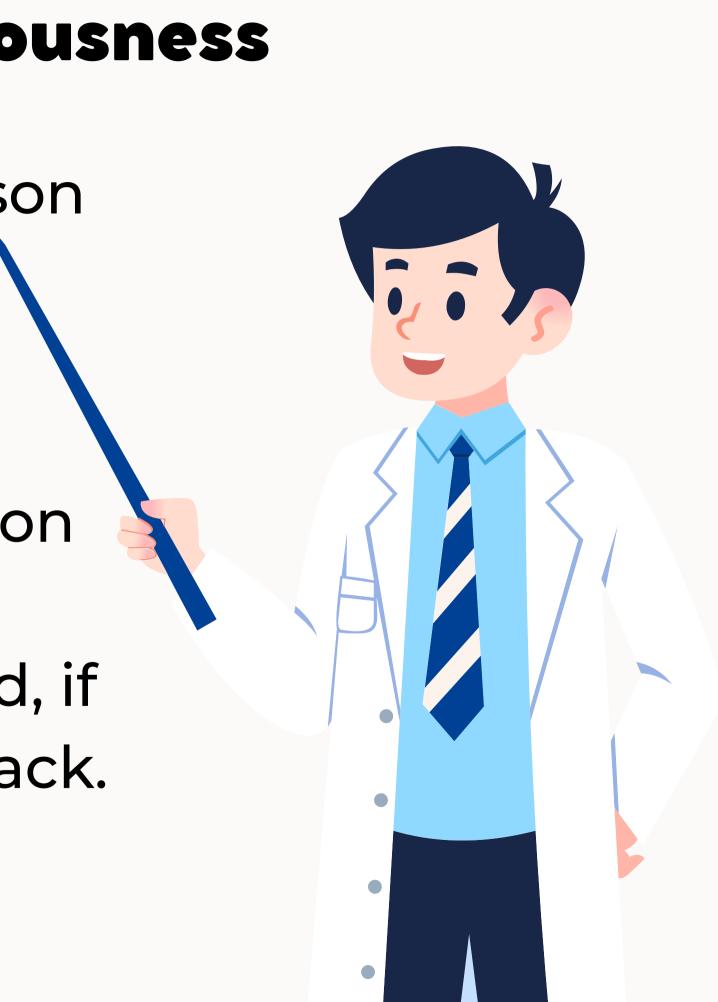


- This method is applicable to individuals older than one year.
- If the air passage is clear, discontinue abdominal thrusts but limit to five repetitions.
- If the object remains lodged, alternate five back blows and five abdominal thrusts.
- Repeat until the object is expelled or the person loses consciousness.



### If the Person Loses Consciousness

- Carefully lay the unconscious person on the floor.
- Call for help if alone and ask a bystander to seek immediate assistance or arrange transportation to a healthcare facility.
- Kneel down beside the person and, if necessary, turn them onto their back.
- Initiate CPR.



# Choking In Infants



## **Understanding Infant Choking**

- Choking in infants occurs when their airway is obstructed or airflow is restricted, posing a lifethreatening situation.
- Prompt action is crucial when dealing with choking infants, as they are unable to clear their airway effectively.
- Infants often choke on non-edible objects, and immediate assistance is necessary to prevent complications.



### **ACTIONS FOR CHOKING INFANTS (UNDER ONE YEAR)**







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### Head and Neck Support



Back Blows

# Urgent Assistance

- Call for help if alone, ensuring someone seeks immediate assistance or arranges transportation to the
  - nearest healthcare facility.
- Instruct the bystander to confirm if help has been obtained.

## Positioning

 Kneel down to secure a stable position and prevent the baby from falling.

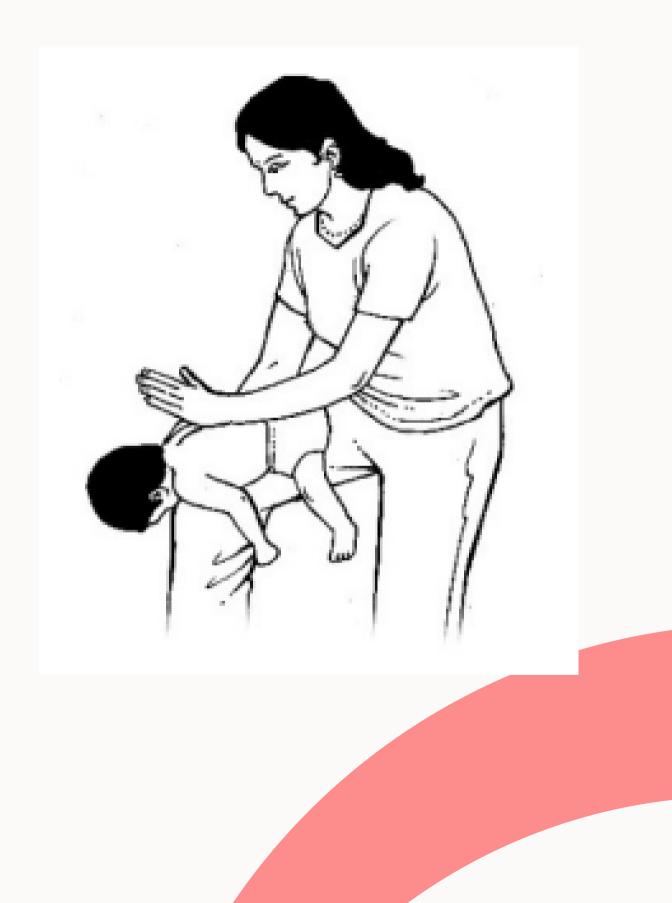
- Place the baby along your forearm: 1. Right-handed individuals: Use the left forearm.
  - 2. Left-handed individuals: Use the right forearm.



## **Head and Neck Support**

- Support the baby's head and neck with one hand, ensuring the mouth remains uncovered.
- Position the baby face down, with the head lower than the trunk, resting on your forearm and supported by your thigh.





## **Back Blows**

 With your free hand, deliver five firm blows to the area between the baby's shoulder blades, using the base of your palm.

# Repositioning

• Swiftly turn the baby, while supporting the head, onto their back, facing you and resting on your arm

# If Object Not Dislodged

### **Chest Thrusts**

- Place two fingers (the two after your thumb) in the middle of the baby's chest.
- Deliver five thrusts, pushing inward and upward.
- Note: This method of chest thrusts is only suitable for infants under one year old.
- Discontinue after five thrusts.





## **Alternate Blows and Thrusts**

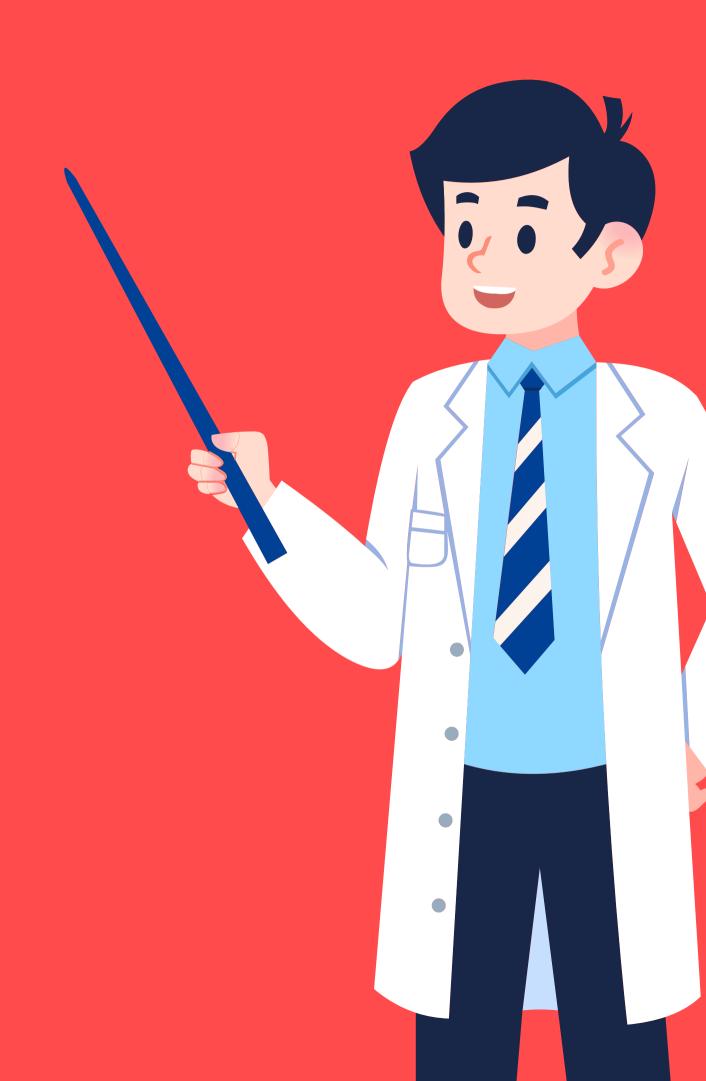
- If the object remains lodged and the baby is still choking, provide another set of five back blows followed by five chest thrusts.
- Repeat this process until the object is expelled or the baby loses consciousness.

## **Baby Losing Consciousness**

- Safe Placement
- Lay the baby down on a firm and safe surface, such as the floor.
- CPR Initiation
- Begin CPR on the baby, following appropriate procedures.
- Continuing CPR and Seeking Assistance



## SWELLING WITHIN THE THROAT



### **SWELLING IN THE** THROAT MAY OCCUR **AS A RESULT OF**

drinking a very hot liquid

Swallowing corrosive poisons

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Inflammation

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### Allergic reaction

# **PROVIDING FIRST** AID TO THE PERSON WITH SWELLING THROAT

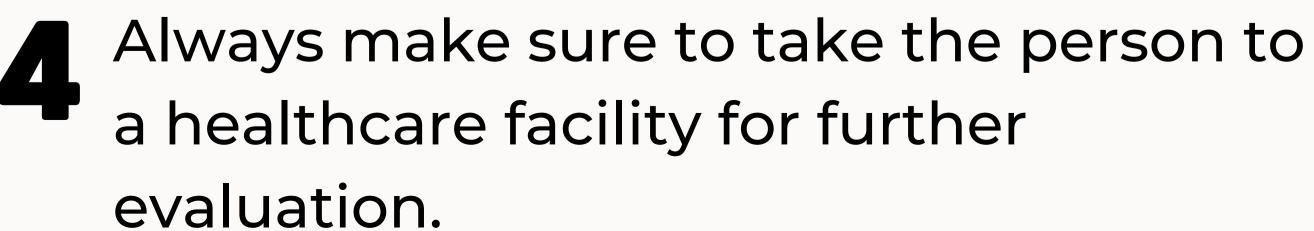




water to sip.

### If their breathing stops:

- Call for help.
- Start CPR.



### If their breathing is normal or returns to normal, you can give them ice to suck on or some cold



## HYGIENE





Use soap and water to wash your hands.

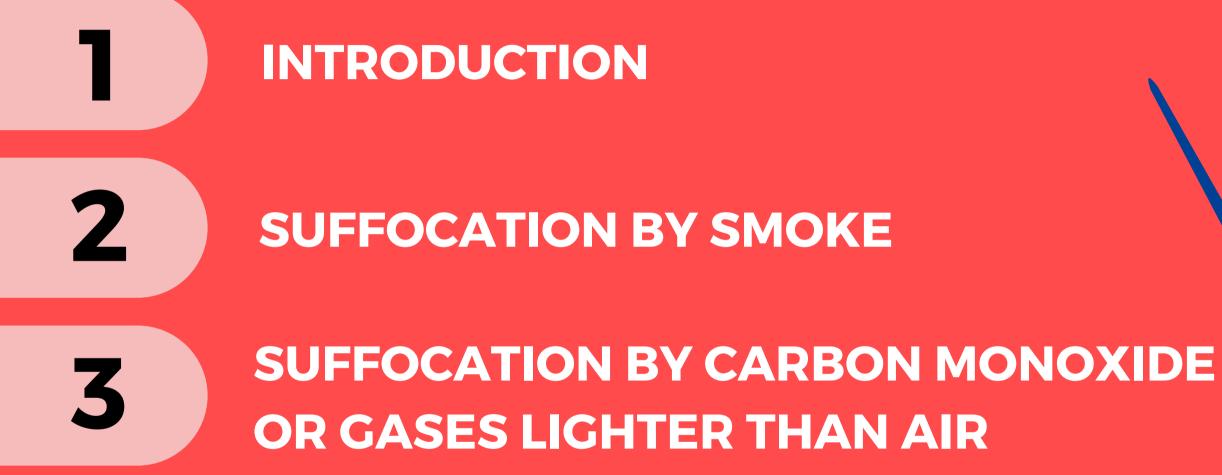
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If there is no soap available, you can use ash.

If you have alcohol-based sanitizer, you can use that too.



## SUFFOCATION BY SMOKE OR GASES



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**SUFFOCATION BY CARBON DIOXIDE OR GASES HEAVIER THAN AIR** 

WHEN TO REFER TO A HEALTHCARE FACILITY



### ASPHYXIA

- Asphyxia can occur in an environment where sufficiently oxygenated air is present, but cannot be adequately breathed because of air contamination such as excessive smoke, or can occur in case of breathing in the oxygen-depleted air.
- An asphyxiant gas is usually a nontoxic or minimally toxic gas which reduces or displaces the normal oxygen concentration in breathing air.
- Because asphyxiant gases are relatively inert and odourless, their presence in high concentration may not be noticed, except in the case of carbon dioxide.

### **TOXIC GASES**

- Toxic gases, by contrast, cause death by other mechanisms, such as competing with oxygen at the cellular level (e.g., carbon monoxide) or directly damaging the respiratory system.
- Even smaller quantities of these gases can be deadly.
- Carbon monoxide (CO) is a colourless, odourless, and tasteless but highly toxic gas which takes the space in haemoglobin that normally carries oxygen, thus making it ineffective in delivering oxygen to body tissues.
- Carbon monoxide is lighter than air.



- Carbon monoxide is produced when there is not enough oxygen to produce carbon dioxide (CO2), such as when operating a stove or an internal combustion engine in an enclosed space.
- Carbon dioxide (CO2) is a colourless, odourless gas which is heavier than normal air.
- It can be pocketed in high concentrations in wells, sewerages and mines.
- Other gases like refrigerator gases, compressed gases for cooking or lighting can also cause suffocation.

## **SUFFOCATION BY SMOKE**

### **1. Safety First and Call for help:**

- Make sure there is no danger to you, the person or bystanders. Ask a bystander to call for help.
- Do not take any risk that could endanger you. The fire brigade has specialised teams and equipment to handle these situations safely.
- Protect yourself by a towel or a cloth (preferably wet) over your mouth and nose.
- Crawl on the floor and stay as low as possible.





### **2. Move the Victim out of the Smoke**

- Move the victim as quickly as possible away from the area.
- Loosen the victim's clothes at neck and waist.
- If the breathing stopped, call for help and start CPR.
- Always arrange transport for the victim to a healthcare facility for further follow up.









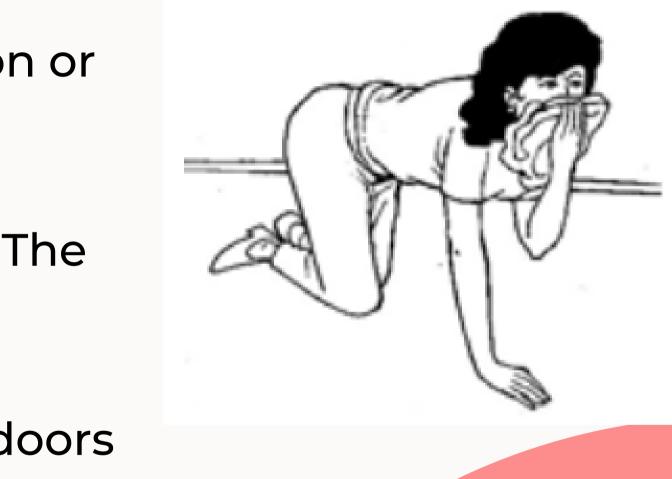
### 3. Hygiene

Always wash your hands after taking care of a person. Use soap and water to wash your hands. Alcohol-based sanitizers can also be used, if available.



## **SUFFOCATION BY CARBON** MONOXIDE (CO) OR LIGHTER GASES

- Make sure there is no danger to you, the person or bystanders. Ask a bystander to call for help.
- Do not take any risk that could endanger you. The fire brigade will handle these situations safely.
- Ensure the circulation of fresh air by opening doors and windows.
- If the gas is expected to be a deadly poisonous gas, do not enter the affected area!



- Before entering the enclosed space, take two or three deep breaths and hold your breath as long as you can. Use a gas mask if available.
- Crawl on the floor and stay as low as possible.
- Move the victim to an area of fresh air away from the affected area.
- Loosen the victim's clothes at neck and waist.
- If the breathing has stopped, call for help and start CPR.
- Always arrange transport for the victim to a healthcare facility for further follow up.

### 3. Hygiene

Always wash your hands after taking care of a person. Use soap and water to wash your hands. Alcohol-based sanitizers can also be used, if available.



## SUFFOCATION BY CARBON DIOXIDE **OR HEAVIER GASES 1. Safety First and Call for help:**

- Make sure there is no danger to you, the person or bystanders. Ask a bystander to call for help.
- Make sure there is no danger to you. Do not take any risk that could endanger you. The fire brigade has specialised teams and equipment to handle these situations safely.
- If the gas is expected to be a deadly poisonous gas, do not enter the affected area!



### 1. Safety First and Call for help:

- Ensure the circulation of fresh air before entering the area if possible.
- Use a gas mask. If not available, before entering the enclosed space, take two or three deep breaths and hold your breath as long as you can.
- Enter in an upright position and stay as high as possible.



### 2. Move the Victim to an Area of Fresh Air

- Move the victim as quickly as possible away from the area.
- Loosen the victim's clothes at neck and waist.
- If the breathing stopped, call for help and start CPR.
- Always arrange transport for the victim to a healthcare facility for further follow up.



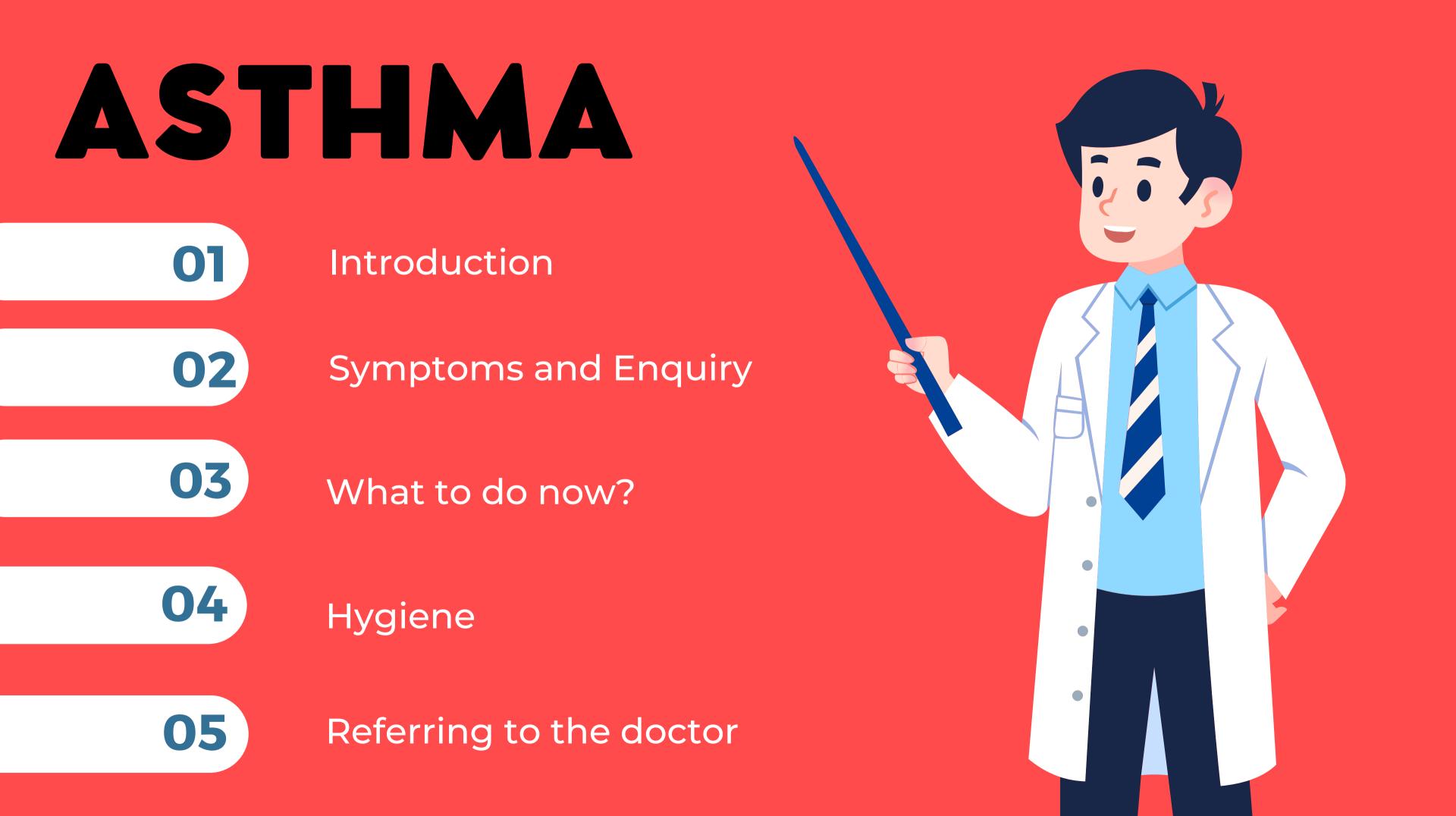
### 3. Hygiene

Always wash your hands after taking care of a person. Use soap and water to wash your hands. Alcohol-based sanitizers can also be used, if available.



## WHEN TO REFER TO A HEALTHCARE FACILITY?

Always urgently transport the casualty who was exposed to smoke or gases to the nearest healthcare facility.



## Introduction

- When a person has asthma, their airways narrow, swell, and create more mucus than normal
- This may make breathing difficult and bring on symptoms including wheezing, coughing, and shortness of breath.
- For some people, asthma can be a mere annoyance, but for others it can be a serious issue that interferes with everyday activities and even result in life-threatening asthma episodes.

 Although asthma cannot be cured, its symptoms can be managed with the use of prescribed drugs.

 A history from the person exhibiting symptoms might be used to diagnose asthma.

# SYMPTOMS

ENQUIRY

AND



### **SYMPTOMS:**

- Breathing challenges
- Rapid breathing or coughing, occasionally with mucus coughed up.
- A whistling or Wheezing noise is made when exhaling.
- Complaints of chest pain or tightness.



### Breathlessness prevents you from getting any sleep.

 Asphyxia symptoms include a grey-blue tint to the lips and nail beds.

Long-lasting attacks could wear you out.

# WHAT TO DO NOW?



- Remain composed and reassuring.
- Help them settle into a comfortable position by having them sit up and lean forward, for example.
- Allow them to use their inhaler if they have one.
- To get fresh air, open a window, then take off any tight clothing.





- If it's their first attack, it's severe, or if the inhaler isn't working, get emergency medical attention. Check their breathing and make sure their airway is open if they go unconscious.
- If they cease breathing, perform CPR.

# HYGIENE

### **C**BLUEASTRO

 Wash your hands before and after taking care of patient

 Maintain hygiene by washing hands with soap and water or an alcohol based sanitizer

# REFERRING

# 

# DOCTOR



### For Emergency:

 Always urgently transport the person to the nearest hospital if the at continues even after the person took his medication.

### For Safety:

- Always advice the person known to be treated for asthma to visit the healthcare facility
- as soon as possible after the asthma crisis for further follow-up and treatment.